Energy Information Administration www.eia.doe.gov

COUNTRY ANALYSIS BRIEFS

South Africa

Last Updated: February 2006

Background

South Africa is rich in mineral resources. The country is the world's largest producer and exporter of gold and platinum, in addition to being a significant coal exporter.

Since the end of apartheid in 1994, the South African government has worked toward bringing economic equality to historically disadvantaged (non-white) groups. Major institutional transformations have occurred in the judicial, educational, health, housing and legislative sectors. However, income disparity in the country continues to rank amongst the highest in the world. In September 2005, unemployment was estimated at 26.7 percent. Poverty among South Africa's disadvantaged groups is exacerbated by one of the world's highest HIV/AIDS infection rates.

South Africa's real gross domestic product (GDP) grew 4.5 percent in 2004 and 4.4 percent in 2005. The South African government is seeking to increase jobs and promote business development throughout the country with the hope of reaching annual 6.0 percent GDP growth. Conservative fiscal policies have reduced the double-digit inflation that South Africa experienced in the 1980s. Inflation was 3.6 percent in 2005 and is forecast at 4.2 percent for 2006. In December 2005, the South African Reserve Bank's Monetary Policy Committee (MPC) decided to leave the country's interest rate unchanged at 7.0 percent. Economists suggest that if inflation remains low and the currency remains stable, an interest rate cut may be made in 2006.

The South African government has committed to ensuring that black-owned companies have access to the energy sector. Under its black economic empowerment (BEE) program, the South African government has set targets of 25 percent BEE ownership of energy companies by 2014. Large, predominately white-owned corporations have sold assets to achieve this objective, with the first sale occurring in 2000. BEE firms are commonly referred to as "empowerment" firms.

South Africa is a member of the African Union (AU), the Southern Africa Development Community (SADC), and the Southern Africa Customs Union (SACU).

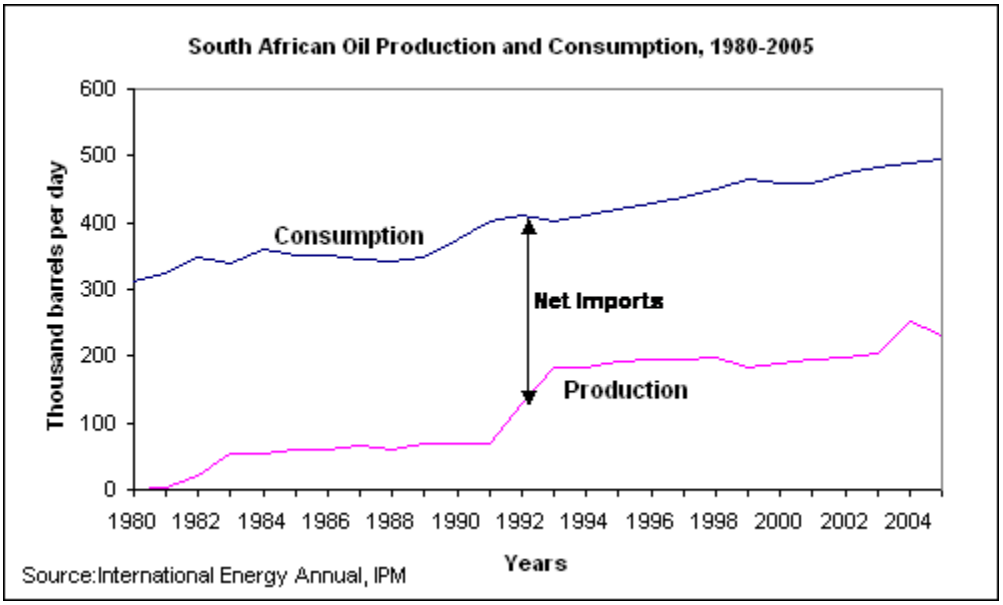
Oil And Natural Gas

South Africa has the second largest oil

According to the *Oil and Gas Journal* (*OGJ*), South Africa had proven oil reserves of 15.7 million

refinery system in Africa. Since the country is not a major oil producer, the Middle East supplies the majority of the crude oil to the refineries.

barrels as of January 2006. The majority of production in the oil industry comes from synthetic fuels (175,000 barrels per day, bbl/d), while actual crude production in 2005 was only 34,000 bbl/d. Over 50 percent of total oil consumed (496,000 bbl/d) in South Africa comes from imports, the majority of which are from the Middle East, with Saudi Arabia and Iran as the country's chief suppliers. Nigeria is now the third largest supplier of imported oil to South Africa.



In 2003, natural gas production in South Africa was 83 billion cubic feet (Bcf), all of which was consumed domestically. The Petroleum Oil and Gas Corporation of South Africa (PetroSA) plans to invest money in the development and exploration of offshore gas fields. PetroSA hopes to locate natural gas feedstock to keep its gas-to-liquids (GTL) Mossel Bay plant running through 2018.

Sector Organization

In 2005, South Africa launched the National Energy Regulator of South Africa (NERSA). NERSA regulates policy over the entire energy industry in South Africa and will be responsible for implementing South Africa's energy plan. South Africa also has a national oil and natural gas company, the Petroleum Oil and Gas Corporation of South Africa (PetroSA). PetroSA is responsible for managing and promoting the licensing of oil and gas exploration in the country. This includes both onshore and offshore exploration. In addition to PetroSA, the South African government's subsidiary, iGas, is development overseer of the natural gas industry, which includes liquefied natural gas (LNG) and liquefied petroleum gas (LPG).

The first privatization in South Africa's gas distribution sector was completed in August 2000. A consortium led by U.S.-based Cinergy and Egoli Empowerment Holdings, purchased Johannesburg's Metro Gas Company. Renamed Egoli Gas, the consortium announced in September 2000 the signing of a 20-year contract with Sasol Gas. The contract will provide the Johannesburg area with 2.5 million cubic feet of gas per year and an option to increase the supply up to seven million cubic feet of gas per year. Egoli Gas plans to increase its customer base to 100,000 customers by 2010.

In December 2001, oil companies including BP, Caltex, Shell and Total signed the Oil Industry Charter for Transformation, a BEE mandate, which aims to have black-controlled companies owning 25 percent of the oil sector by 2014. Similarly, the government aims to reserve 10 percent of new natural gas exploration licenses for BEE companies.

In December 2003, South Africa's Competition Commission approved the proposed merger of Sasol and Exel Petroleum (Exel), a black-owned company. As a result, Sasol gained control of Exel's network of 189 service stations throughout South Africa. In February 2004, Sasol announced plans to merge with Engen, a subsidiary of Malaysia's Petronas. Each company would own a 35 percent stake in the new company, while 25 percent would be divided between each member's BEE partners. As of December 2005, the Competition Commission had not given

its final decision on the merger, however, the Competition Commission implied that the merger was not in the best interest of the country.

On January 1, 2006 South Africa switched from using leaded fuels to unleaded fuels in motorized vehicles. Prior to the fuel switch, an estimated 60 percent of South African vehicles were leaded fuel users. The South African government, under the clean fuels policy, paid to have older vehicles adapted for unleaded fuel. In addition, diesel fuel used in South Africa after January 1, 2006 will have an ultra-low sulfur content, which will increase its cost by $0.11 per gallon.

Production

PetroSA and Energy Africa began South Africa's first oil production at the Oribi oil field in 1997 using a floating, production, storage and offloading vessel (FPSO). The Oryx oil field, which lies 3.7 miles from the Oribi field, began production in May 2000. Combined, the two fields produce around 16,000 bbl/d, although, PetroSA has indicated that both fields are in decline.

Production at the Sable Field, located approximately 60 miles off the southern coast, commenced in August 2003. The project, a partnership between PetroSA and Pioneer, has six subsea wells connected to a FPSO with the capacity to process 60,000 bbl/d of oil, re-inject 80 million cubic feet per day (Mmcf/d) of natural gas and recover natural gas liquids. Current production at the Sable field is around 23,000 bbl/d. Associated gas, which was re-injected to improve liquids recovery, may also be recovered as part of a planned natural gas development project. PetroSA, who currently owns a 60 percent interest in Sable, is expected to sell a 9 percent stake in the field to BEE companies.

The production platform at the offshore FA natural gas field, from which nine production wells have been drilled, is one of the largest structures ever built in South Africa. Four production wells on the FAR and FAH satellite gas fields are linked to the platform by subsea systems. Production wells on the EM and EBF gas fields are connected to the FA platform by a 32-mile pipeline designed for the future tie-in of other gas fields.

In September 2003, the South African National Assembly passed the Petroleum Pipelines Bill, which plans for privatization of oil and gas pipelines and guarantees the future oil supply of the Natref refinery. Similarly, the Petroleum Products Amendment Bill seeks to improve transparency in the sector, govern fuel specifications, and allocate retail sites.

Exploration

The most prolific of South Africa's exploration blocks has been Block 9 in the Bredasdorp Basin. PetroSA has made several discoveries on the block, including the Oribi (see above), Oryx and Sable fields. PetroSA and Pioneer Natural Resources also discovered Boomslang, which tested at a combined rate of 3,120 bbl/d of oil, 26 million cubic feet per day (Mmcf/d) of natural gas, and 300 bbl/d of condensate. In 1991, the two companies discovered EBB, which originally tested at 46 Mmcf/d of natural gas and 1,830 bbl/d of condensate. Both PetroSA and Pioneer plan to drill additional appraisal wells in Boomslang and EBB fields.

There is an active exploration program in Block 11A, which lies east of Block 9. PetroSA's Ga-A find, discovered in 1969, had an initial flow rate of 24 Mmcf/d. The Ga-Q field was discovered in 1983 and had an initial test flow rate of 11.4 Mmcf/d. Additional appraisal drilling is planned on Block 11A as well.

In March 2000, an offshore natural gas discovery was made in the Ibhubezi field in Block 2A. US-based companies Forest Oil Corporation (Forest) and Anschutz, along with BEE Company Mvelaphanda, are exploring in Block 2A, which has estimated reserves of 15 Tcf. In August 2003, PetroSA purchased a 30 percent share in the Ibhubezi Gas Field project. PetroSA hopes that Ibhubezi gas, along with gas from Namibia and Mozambique, can be used at its 45,000 bbl/d Mossel Bay GTL plant, where reserves may be depleted by 2007.

In January 2002, Petroleum Geo-Services (PGS) and Petroleum Agency SA (PASA) announced a joint cooperation agreement to promote deepwater exploration acreage in Block 2B and acreage west of Blocks 5 and 6. In December 2002, a consortium of Jebco Seismic, PetroSA, and Global Exploration Services identified a petroleum system off the east coast of South Africa in the Tugela Cone.

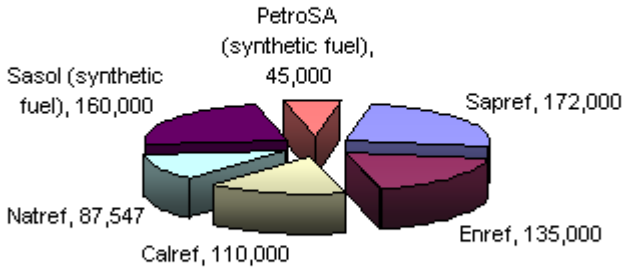
Although Shell withdrew from the project in August 2002, negotiations continue between the South African government and operators of Namibia's offshore Kudu gas field (1.3 Tcf). ChevronTexaco replaced Shell, but withdrew from the project in November 2003. Although Energy Africa assumed full interest in the project and planned to pursue its development unilaterally, it did not have adequate funding to do so and sold a 10 percent stake to Namcor, the Namibian national oil company (NOC). Initial plans call for gas to be piped from the Kudu field to Cape Town, where it will supply fuel for a power station. PetroSA has expressed interest in becoming a partner on the Kudu field, and the government wants to extend the pipeline to the PetroSA synfuel facilities at Mossel Bay.

The South African government has provided $213 million to fund exploration in fields off Mossel Bay. Any recoverable natural gas reserves will be developed with the intent of extending the lifespan of the Mossel Bay GTL project.

Refining and Downstream

South Africa has the second largest refining capacity in Africa (504,547 bbl/d), surpassed only by Egypt. Its refined products are both sold in the local market and exported, primarily within Southern Africa, but also into both the Indian and Atlantic basin markets. Major refineries include Sapref (172,000 bbl/d) and Enref (135,000 bbl/d) in Durban, Calref (110,000 bbl/d) in Cape Town, and Natref (87,547 bbl/d) at Sasolburg.

South African Oil and Synthetic Fuel Refinery Capacity- 2005
Thousand Barrels per Day



sources:Oil and Gas Journal & PIW

Multinational companies, including BP, Shell, Caltex (ChevronTexaco), Engen, and Total, are major participants in South Africa's downstream petroleum markets. Several domestic firms are also involved, including black-owned firms Naledi Petroleum and Afric Oil. Worldwide Africa Investment Holdings (WAIH), the largest black-owned oil group, owns 55 percent of Afric Oil, 51 percent of South African Zenex, and 20 percent of Engen.

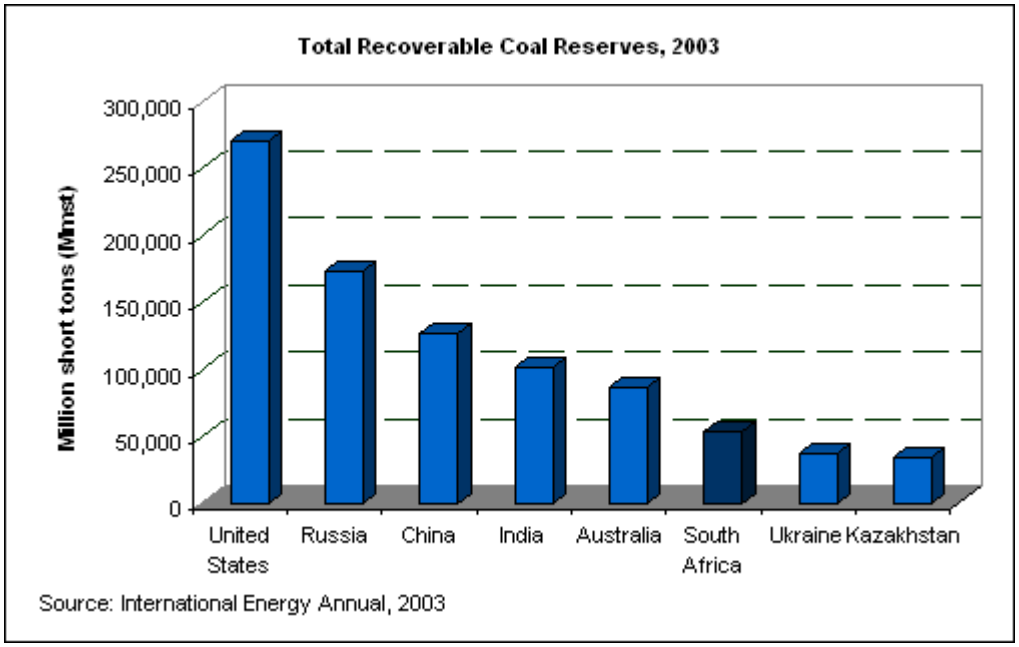
Shell and BP plan to invest $100 million in the Sapref facility, South Africa's largest refinery. The investment, intended primarily to reduce emissions, will occur over the next five years. In accordance with BEE mandates, Shell is expected to sell a 25 percent stake in the Sapref refinery to a black-owned partner. In 2002, Engen announced a $70 million investment in its Enref facility to reduce pollution.

In 2005, Drako Oil and Energy announced the proposed construction of a 300,000 bbl/d refinery at Richards Bay in the KwaZulu-Natal province. If the refinery is built, it would be the largest in the country. The facility would have a 6.2 million barrel storage capacity and would be linked to the Petronet pipeline system. Crude oil for the facility would most likely come from Algeria or the UAE.

Coal

South Africa has the world's sixth largest recoverable coal reserves.

Coal is the primary fuel produced and consumed in South Africa. The country has the world's sixth largest recoverable coal reserves (53.7 billion short tons), approximately 5 percent of the world total. Although South Africa has 19 official coal fields, 70 percent of recoverable reserves lie in just three -- Highveld, Waterberg, and Witbank.



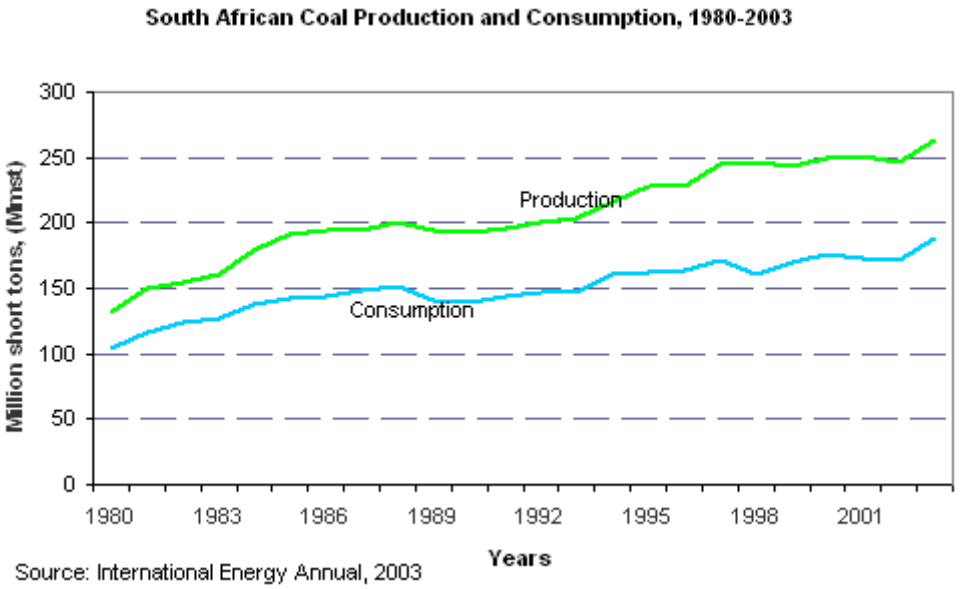
Production

South Africa is the world's sixth largest coal producer, producing 264 million short tons (Mmst) of coal in 2003. The Mpumalanga province accounts for 83 percent of South African coal production, while Free State, Limpopo, and KwaZulu-Natal also have producing mines. Anglo American's Anglo Coal (Anglo), BHP Billington's Ingwe Coal (Ingwe), domestic mining firms Eyesizwe Coal (Eyesizwe), Kumba Resources (Kumba), Sasol Mining (Sasol), and Swiss-based Xstrata Coal South Africa (XCSA) are responsible for the majority of South Africa's coal production.

In July 2005, Anglo American's Isibonelo coal mine produced its first coal for shipment to Sasol Limited. The $65 million project will supply 5 Mmst of thermal coal annually to Sasol Synfuels when the mine reaches full production. Anglo America and Sasol also announced plans to develop the Kriel South coalfield. Anglo will establish an operation on the northern portion of the field, and Sasol plans to expand its existing underground operations at the Syferfontein colliery (coal mine). Coal from the two operations is expected to supply Sasol Synfuel for the next 20 years. In October 2004, Kumba Resources, the fifth largest coal producer in South Africa, revealed plans to invest $52 million to expand the Grootegeluk and Leeuwpan coal mines. The project is expected to be completed later this year.

XCSA's WitCons Colliery is currently undergoing a $4.8 million expansion that is expected to increase production by 50 percent. XCSA is also investing $10 million in the Tavistock Colliery to raise annual production capacity from 1.2 Mmst to 2 Mmst. In addition, XCSA plans to invest $20 million for the initial development of the Goedgevonden Colliery. XCSA hopes the investment will increase production of coal for export and for domestic power station feedstock.

In January 2003, Ingwe announced the sale of its Delmas colliery in Mpumalanga to Kuyasa Mining, a small South African empowerment firm. The sale of Delmas leaves Ingwe with operational control of seven mines in South Africa, four of which it owns and three of which are jointly owned with XCSA. Ingwe is considering merging some of its operations to maintain its position as the main supplier to South Africa's electricity utility, Eskom.



Source: International Energy Annual, 2003

Consumption

South Africa consumed 188 Mmst of coal in 2003, 90 percent of which was used for electricity generation and the synthetic fuel industry. Other coal consuming sectors include the non-synthetic fuels industrial sector, metallurgical industries, and the merchant & domestic sectors.

Exports

One-third of coal produced in South Africa is exported. The primary importers of South African coal are the European Union (Germany and Spain) and East Asia (Japan). The vast majority of South African coal exports are shipped through the Richards Bay Coal Terminal (RBCT). With the capacity to export 79.4 Mmst annually, RBCT is the world's largest coal export facility. At present, only shareholding members of the RBCT Company, which includes Ingwe, Anglo, XCSA, Total, Sasol, Kangra and Eyesizwe, and JCI/Lonrho/Duiker are permitted to use the export facility.

Although the South Dunes Coal Terminal (SDCT) opened in 2000 to facilitate the participation of BEE companies in the coal export sector, RBCT exporters and the SDCT partners agreed in June 2001 to expand the RBCT. Because no new rail infrastructure is needed, the expansion of RBCT is considered the most cost-effective method of increasing South Africa's coal export capability. The expansion's expected completion is 2008, and RBCT's annual export capacity will be increased by 11 Mmst. SDCT firms will be permitted to export 7.2 Mmst per year from the terminal. In March 2002, SDCT firms secured $41 million of the expansion's $52 million total cost. The remaining $11 million will be financed by RBCT shareholders. The first shipment of coal by an empowerment entrant was loaded at the RBCT in October 2003.

Kumba and the Iron and Steel Corporation of South Africa (ISCOR) export coal through the Durban Coal Terminal (DCT), and Gold Fields utilizes the Matola Coal Terminal (MCT), which is located in Maputo, Mozambique. South Africa-based Grindrod became the new owner of MCT in 2005. MCT management anticipates that the facility will have the capacity to export 5.5 Mmst of coal by 2006. Spoornet, South Africa's state-owned rail company, announced plans in 2003 to increase freight charges to the MCT and DCT by 30 percent on average over three years, which could hinder coal exports through these terminals.

Synthetic Fuels

Synthetic fuels account for 76 percent of South Africa's oil production.

South Africa has a highly developed synthetic fuels industry supported by abundant coal resources and offshore natural gas and condensate production in Mossel Bay. Sasol, with a capacity of 160,000 barrels per day (bbl/d), and the Petroleum Oil and Gas Corporation of South Africa (PetroSA), with a capacity of 45,000 bbl/d, are the major producers of synthetic fuel in South Africa.

Sasol, the world's largest manufacturer of oil from coal, maintains coal liquefaction plants located

at Secunda (oil) and Sasolburg (petrochemicals). Privatized in 1979, Sasol expanded its Secunda facilities to reduce costs and to help it remain competitive in 2001.

State-owned PetroSA began synfuel production in 1993. The PetroSA plant receives natural gas and condensate feedstock from the FA, EM, and EBF gas fields in Mossel Bay through a pair of 56-mile pipelines. PetroSA converts the gas into a variety of liquid fuels including motor gasoline, distillates, kerosene, alcohols and LPG.

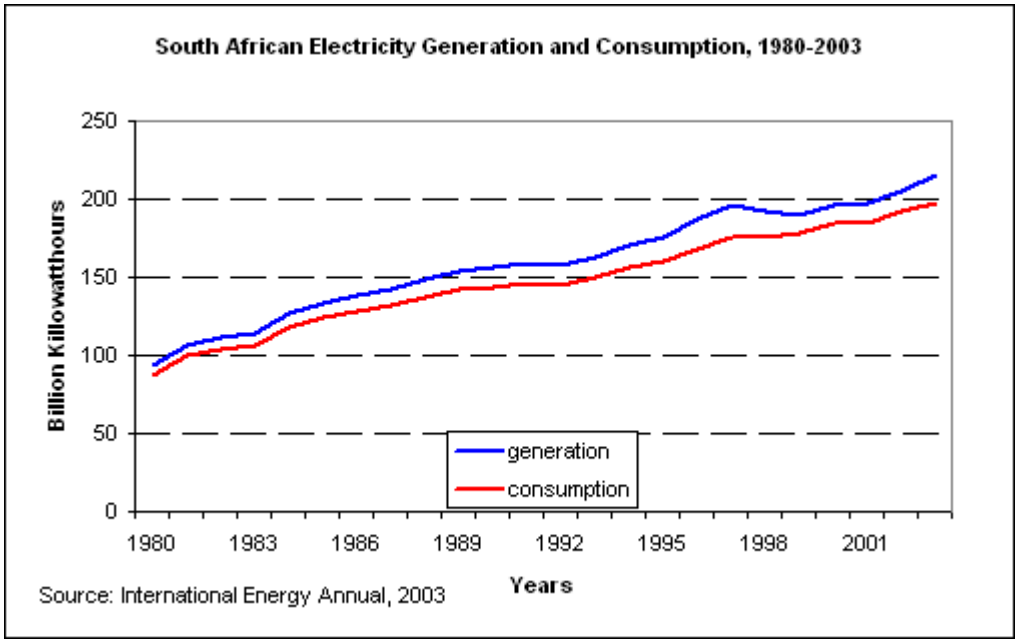
In June 2004, President Thabo Mbeki and Mozambican President Joachim Chissano inaugurated a $1.2 billion project in which Mozambique would supply South Africa with natural gas to replace coal-based feedstock at Sasol's Infrachem chemicals facility in Sasolburg.

In November 2004, Sasol announced the creation of Uhambo, a joint-venture fuel refining and marketing company. Uhambo will combine Sasol's Liquid Fuels Business with Petronas' Engen, while Tschwarisano and LFB Investment and Africa Energy Resources (SER) will also have stake in its ownership. Sasol has proposed implementation of a black economic empowerment (BEE) program to guarantee that black groups have a 25 percent stake in Uhambo.

Electricity

South Africa generates sufficient electricity for its domestic needs and supplies any surplus power to SADC countries.

Parastatal company Eskom is one of the largest utilities in the world and generates 95 percent of South Africa's electricity. Eskom has 36,200 megawatts (MW) of net generating capacity, which is primarily coal-fired (32,100 MW). In addition, Eskom operates one nuclear power station at Koeberg (1,800 MW), two gas turbine facilities (340 MW), six conventional hydroelectric plants (600 MW), and two hydroelectric pumped-storage stations (1,400 MW). Eskom produces adequate electricity for domestic use and exports surplus power to Botswana, Lesotho, Mozambique, Namibia, Swaziland, and Zimbabwe. Given the prospect of reaching its peak capacity in 2007, Eskom announced in June 2004 a plan to bring its three mothballed power stations (3,800 MW) back into service by 2011. Additional electricity is generated by South African municipalities (2,400 MW), and private companies (800 MW).



NERSA oversees the restructuring of South Africa's electricity supply industry (ESI) in accordance with existing legislation and the Energy Policy White Paper, both of which are crucial to the government's continuing electrification program. In addition, NERSA licensed Eskom as the national electricity distributor. Montraco, a private company, is licensed to provide transmission service from the National Transmission System to specific points in Mozambique and Swaziland.

The South African government has tried to initiate privatization in the electricity sector by selling a 30 percent stake of Eskom. As a result, Eskom management proposed a plan to integrate BEE companies and other private sector firms into the electricity sector without privatizing Eskom itself.

The outcome was the Electricity Distribution Industry Restructuring Bill, which aims to merge Eskom's distribution assets with the country's municipal distributors to form six regional electricity distributors (REDS). Eskom will not hold a stake in the REDS; rather they will come under the umbrella of a government-controlled holding structure called EDI Holdings (EDI. In July 2005, the first RED (RED 1), became operational. RED 1 now controls the electricity distribution previously controlled by the Cape Town municipal authorities and Eskom.

Industry analysts have predicted that South Africa's excess electricity capacity will likely be exhausted by 2007. In 2005, in an effort to increase electricity capacity, the NER approved a tariff increase. The increase will raise electricity prices above South Africa's inflation rate. Eskom has plans to use the increased profits to fund installation of new projects.

In October 2004, the South African government announced that it would spend $26 billion on its power and transport sector over the next five years. In August 2004, City Power, Johannesburg's local power utility, pledged $316 million to reduce power outages attributed to the dilapidated distribution network, 70 percent of which is estimated to be between 20 and 40 years old. As part of its rural electrification program, South Africa invited bids to provide 40,000 rooftop solar power systems to rural areas in June 2004. Financing for the project ($19.4 million) was provided by a German development bank, KfW Bankengruppe.

Additional funding is still needed for the proposed pebble bed modular reactor (PBMR) demonstration unit at Koeberg, which will have generating capacity of 125 – 165 MW. The PBMR creates less spent fuel than the pressurized water reactors (PWR) being used at the current Koeburg facility. The Eskon-led project, delayed for over a year due to a lack of investors, needs approximately $1.3 billion for construction of a demonstration plant and a pilot fuel production plant. Proponents of the PBMR would like to begin constructing it in 2007. In addition, the proponents hope that government-owned entities will take a larger share in the project. Funding from the Nuclear Energy Corporation of South Africa (NECSA) is another possibility. If the PBMR at Koeburg is successful, Eskom plans to build up to ten PBMR plants to provide power to coastal regions.

In July 2005, Eskom and German-based Siemens signed a contract, under which Siemens will build two power stations in the Western Cape region of South Africa. The power stations will be located at Atlantis and Mossel Bay and will have generating capacity of 600 MW and 450 MW, respectively. Siemens will design the Open Cycle Gas Turbine (OCGT) units and they will be powered by liquid fuels. The expected delivery date for the OCGTs is April 2007.

The Independent Power Company of Southern Africa has a contract to install an 18-MW gas-fired power plant in South Africa's KwaZulu-Natal province. This will be the first independent power plant in the province and will supply power to local businesses. The plant will be able to expand its capacity up to 55 MW, depending on the demand growth in the region.

Evironment

Leaded fuels are no longer sold at service stations in South Africa, an attempt to reduce air pollution.

In 2003, 75 percent of total energy consumption in South Africa came from coal. Because coal is a highly carbon-intensive fossil fuel, over-reliance on it for energy needs can have negative environmental impacts, including air pollution due to coal combustion, groundwater pollution due to mining, and disruption of ecosystems.

South Africa is developing laws to lessen environmental damage and air pollution. In June 2004, BP opened the first lead-free station in South Africa. As of January 2006, all South African fuel stations have switched over from selling leaded fuels to exclusively selling unleaded fuels for motorized vehicles. In addition, all motor fuels (diesel and gasoline) are required to contain less than 500 parts per million (ppm) of sulfur. Motor fuel sulfur content will further be reduced to 50 ppm by 2010.

In recent years, a growing environmental movement in South Africa has challenged strip-mining operations in a sensitive wetland area, drawn international attention to pollution and conditions at the countries refineries, and legally challenged the establishment of South Africa's PBMR program in Koeberg. Environmentalists oppose development of the PBMR, insisting that the scheme's environmental impact assessment is flawed. In June 2004, the South African government encouraged environmental groups to focus on positive aspects of the PBMR project, including a reduction in carbon dioxide emissions.

Profile

Country Overview

Chief of State	President Thabo Mbeki
Location	Southern Africa, at the southern tip of the continent of Africa
Independence	31 May 1910 (from UK)
Population (2005E)	44,344,136
Languages	IsiZulu 23.8%, IsiXhosa 17.6%, Afrikaans 13.3%, Sepedi 9.4%, English 8.2%, Setswana 8.2%, Sesotho 7.9%, Xitsonga 4.4%, other 7.2% (2001 census)
Religion	Zion Christian 11.1%, Pentecostal/Charismatic 8.2%, Catholic 7.1%, Methodist 6.8%, Dutch Reformed 6.7%, Anglican 3.8%, other Christian 36%, Islam 1.5%, other 2.3%, unspecified 1.4%, none 15.1% (2001 census)
Ethnic Group(s)	black African 79%, white 9.6%, colored 8.9%, Indian/Asian 2.5% (2001 census)

Economic Overview

Minister of Trade and Industry	Mandisi Bongani Mabuto Mpahlwa
Currency/Exchange Rate (2/2/06)	Rand (ZAR) US$1=6.0951 ZAR
Inflation Rate (Consumer Price Index)	(2005E): 3.6%, (2006F): 4.2%
Gross Domestic Product	(2005E): $237.1 billion
Real GDP Growth Rate	(2004E): 4.5%, (2005E): 4.4%, (2006F): 4.1%
Unemployment Rate	(2005E): 26%
External Debt (2004E)	$27 billion
Exports (Merchandise)	(2005E): $53,963 million
Exports - Commodities	gold, diamonds, platinum, other metals and minerals, machinery and equipment (1998 est.)
Exports - Partners (2004E)	US 10.2%, UK 9.2%, Japan 9%, Germany 7.1%, Netherlands 4%
Imports (Merchandise)	(2005E): $56,075 million
Imports - Commodities	machinery and equipment, chemicals, petroleum products, scientific instruments, foodstuffs (2000 est.)
Imports - Partners (2004E)	Germany 14.2%, US 8.5%, China 7.5%, Japan 6.9%, UK 6.9%, France 6%, Saudi Arabia 5.6%, Iran 5%
Current Account Balance (2005E)	$ -9,151 million

Energy Overview

Minister of Mineral and Energy Affairs	Lindiwe Benedicta Hendricks
Proven Oil Reserves (January 1, 2006E)	15.7 million barrels
Oil Production (2005E)	230.8 thousand barrels per day, of which 15% was crude oil.
Oil Consumption (2005E)	496.2 thousand barrels per day
Crude Oil Refining Capacity (2005E)	505 thousand barrels per calendar day
Proven Natural Gas Reserves (January 1, 2006E)	1.3 trillion cubic feet
Natural Gas Production (2003E)	0.1 trillion cubic feet
Natural Gas Consumption (2003E)	83 billion cubic feet

Recoverable Coal Reserves (2003E)	53,737.7 million short tons
Coal Production (2003E)	263.8 million short tons
Coal Consumption (2003E)	187.8 million short tons
Electricity Installed Capacity (2003E)	40.5 gigawatts
Electricity Production (2003E)	215.9 billion kilowatt hours
Electricity Consumption (2003E)	197.4 billion kilowatt hours
Total Energy Consumption (2003E)	4.9 quadrillion Btus*, of which Coal (75%), Oil (20%), Nuclear (3%), Natural Gas (2%), Hydroelectricity (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2003E)	108.8 million Btus
Energy Intensity (2003E)	10,942.9 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	411.3 million metric tons, of which Coal (82%), Oil (17%), Natural Gas (1%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)	9.1 metric tons
Carbon Dioxide Intensity (2003E)	0.9 Metric tons per thousand $2000-PPP**
Environmental Issues	lack of important arterial rivers or lakes requires extensive water conservation and control measures; growth in water usage outpacing supply; pollution of rivers from agricultural runoff and urban discharge; air pollution resulting in acid rain; soil erosion; desertification
Major Environmental Agreements	party to: Antarctic-Environmental Protocol, Antarctic-Marine Living Resources, Antarctic Seals, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Marine Life Conservation, Ozone Layer Protection, Ship Pollution, Wetlands, Whaling signed, but not ratified: none of the selected agreements

Oil and Gas Industry

Organization	State-owned Petroleum Oil and Gas Corporation (PetroSA) manages the licensing of oil and gas exploration in the country.
Foreign Company Involvement	BP, Total Elf Fina, Caltex, Shell
Major Refineries (capacity, bbl/d)	Sapref (172,000), Enfref (135,000), Calref (110,000), Natref (87,547)-Synthetic Fuel Refineries, Sasol (160,000), PetroSA (45,000)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.
**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

EIA - Country Information on South Africa

U.S. Government

CIA World Factbook - South Africa
U.S. Department of Energy's Office of Fossil Energy's International section - South Africa
U.S. State Department's Consular Information Sheet - South Africa
U.S.-South Africa Data Exchange Page
MBendi Country Profile - South Africa

Associations and Institutions
Atomic Energy Corporation of South Africa
Chamber of Mines

Foreign Government Agencies
Department of Environmental Affairs and Tourism (DEAT)
Department of Minerals and Energy (DME)

Oil and Natural Gas
Energy Africa
Engen
Eskom
Sasol
South African Petroleum Industry Association (SAPIA)
Petroleum Agency South Africa (PASA)
Petroleum, Oil and Gas Corporation of South Africa (PetroSA)
Petronet

Electricity
National Energy Regulator of South Africa (NERSA)
Eskom

Coal
Anglo
Ingwe
Kumba
Xstrata

Sources

Africa Energy Intelligence
African Energy
Afroil
AFX News
Agence France Presse
AllAfrica.com
Associated Press
Business Day (South Africa)
Business Wire
Chevron-South Africa
CIA World Factbook
Coal Week International
Department of Minerals and Energy
Economist Intelligence Unit ViewsWire
Engen
Eskom
Factiva
Financial Times
Hart's Africa Oil and Gas
International Monetary Fund
Inter Press Service
McCloskey Coal News
Mining Journal
National Electricity Regulator Electricity Supply Statistics: 2001
Oil and Gas Journal
The Oil Daily
Petroleum Argus
Petroleum Intelligence Weekly
Reuters
Shell-South Africa
South Africa Info Reporter
South African Chamber of Mines
South African Ministry of Mineral and Energy Affairs
South African Petroleum Industry Association (SAPIA)
South African Press Association

Statistics South Africa
U.S. Energy Information Administration
World Bank
World Gas Intelligence
Xinhua

Contact Info

Elias Johnson
(202) 586-7277
Elias.Johnson@eia.doe.gov